

CETUS

User's Manual



V1.0.0

Foreword

General

This manual introduces the functions and operations of CETUS monocular camera (hereinafter referred to as "the Camera"). Read carefully before using the device, and keep the manual safe for future reference.

Safety Instructions

The following signal words might appear in the manual.

Signal Words	Meaning
 DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
 LASER RADIATION	Indicates a laser radiation hazard. Take care to avoid exposure to a laser beam.
 NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.0	First release.	December 2025

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, fingerprints, and license plate number. You need to be in compliance with your local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures which include but are not limited: Providing clear and visible identification to inform people of the existence of the surveillance area and provide required contact information.

About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates

might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.

- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Important Safeguards and Warnings

This section introduces content covering the proper handling of the device, hazard prevention, and prevention of property damage. Read carefully before using the device, and comply with the guidelines when using it.

Transportation Requirements



- Transport the Camera within the allowed humidity and temperature conditions.
- Do not fall, squeeze, violently vibrate or immerse the device in liquid when transporting. Gently pick and place the Camera when moving, prevent the internal equipment becoming damaged or cable connection becoming loose.
- Do not transport the Camera without package. Use the factory default package or material of equal quality to pack the Camera when transporting it, otherwise the Camera can become easily damaged.

Storage Requirements



- Store the Camera within the allowed humidity and temperature conditions.
- Do not place the device in a humid, dusty or extremely hot or cold site that has strong electromagnetic radiation or unstable illumination.
- Do not squeeze, violently vibrate or immerse the device in liquid.
- Do not mechanically vibrate or crash when storing.
- Store the Camera in a ventilated place that has no strong electromagnetic radiation.
- For long-term storage of the battery, make sure that it is fully charged every half year to ensure the battery quality. Otherwise, damage may occur.

Operation Requirements



- Prevent liquid from flowing into the Camera to avoid damage to the internal components.
- Do not stuff foreign materials into the Camera to prevent a short circuit which could result in the Camera being damaged or people becoming injured.
- Do not expose the device to high electromagnetic radiation or dusty environments.
- Do not aim the lens at the sun or any other bright light.
- Improper use or replacement of the battery may result in explosion hazard.
- Do not charge other battery types with the supplied charger. Confirm there is no flammable material within 2 m of the charger during charging.
- Make sure that the plug is properly connected to the power socket.
- Do not connect multiple devices to one power adapter, to avoid over-heating or fire hazards caused by overload.
- If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.



- Do not dismantle the Camera. The internal components can only be repaired by a qualified professional. Dismantling it without professional assistance might cause water seeping in or might result in the Camera producing poor quality images.
- Operating temperature: -30°C to $+55^{\circ}\text{C}$ (-22°F to $+121^{\circ}\text{F}$), and the operating humidity shall be 95% or less.

Maintenance and Repair Requirements



- Prevent liquid from flowing into the Camera to avoid damage to the internal components. In case the liquid enters the Camera, immediately stop using the Camera, cut off the power, and disconnect all the cables, and then contact your local customer service center.
- Use the accessories regulated by the manufacturer. The Camera should be maintained by qualified professionals.
- Make sure to cut off the power before cleaning the Camera, to prevent electric shock.



If the Camera malfunctions, contact your local customer service center. Do not dismantle the Camera.



- Clean the Camera body with a piece of soft dry cloth. For any dirt that is hard to remove, pick up a piece of clean and soft cloth, dip it into a little neutral detergent and gently wipe the dust away. After that, wipe away all the remaining liquid on the Camera with another dry cloth. Never use volatile solvents such as alcohol, benzene and thinner, or cleaners that are strong and abrasive. Otherwise, the Camera's surface coating will be damaged and its working performance will be encumbered.
- Save the factory package of the Camera. When the Camera malfunctions, pack the Camera with the factory package and send to the dealer.

Laser Requirements



Laser can cause damages to eyes. Do not look directly at the laser beam or observe the beam with optical devices when the laser is on.

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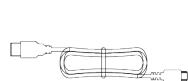
1 Product Introduction

The thermal monocular camera captures sharp thermal imaging at a fast frame rate for smooth, impeccable vision on running targets and from moving vehicles. Designed to increase situational awareness at any time of day, the Camera can detect humans, animals, and objects in complete darkness, haze, or through glaring light, equipping law enforcement professionals, hunters, and outdoor enthusiasts with reliable thermal imaging in tough conditions. Featuring the laser range finder, the Camera can accurately measure the target distance. It is widely used in outdoor scenarios for hunting, animal observation, and more.

2 Structure

2.1 Packing List

Figure 2-1 Packing list



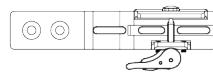
Type-C Cable × 1



Battery × 2



Battery Charger × 1



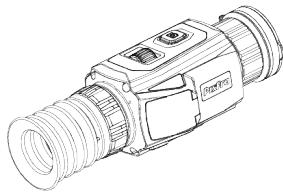
Guide Rail × 1



Guide Rail Screw × 4



Wrench × 1



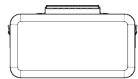
Thermal Monocular Camera × 1



Heating Sticker × 5



Lens Cloth × 1



Camera Pouch × 1



Quick Start Guide × 1



Legal and Regulatory Information × 1



Warranty Card × 1



Thank You Card × 1

2.2 Device Description

Figure 2-2 Button description

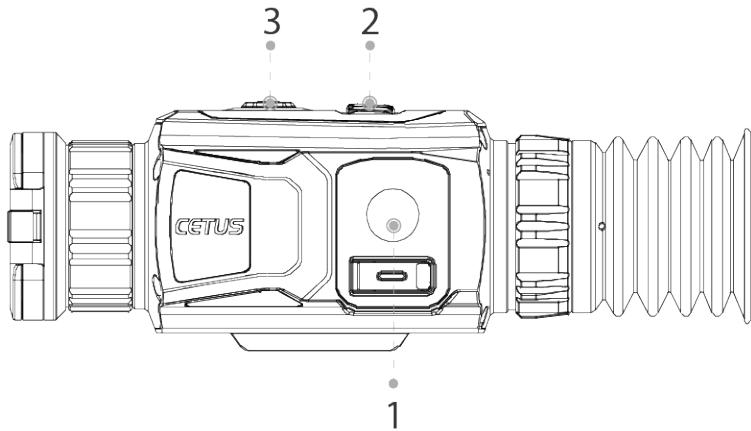


Table 2-1 Button description

No.	Name	Description
1	Power button	<ul style="list-style-type: none">Press and hold the button to start or shut down the Camera.Press the button to enable or disable the standby mode.
2	Menu/Digital zoom wheel	<ul style="list-style-type: none">Press and hold the wheel to go to the standard menu.Press the wheel to go to the brief menu.Double-press the wheel to manually adjust the shutter.Rotate the wheel for digital zoom.
3	Ranging button	<ul style="list-style-type: none">Press the button to do laser ranging.Press and hold the button to record a video. <p>DANGER Laser can cause damages to eyes. Do not look directly at the laser beam or observe the beam with optical devices when the laser is on.</p> <p> This function is only available on the camera with LRF.</p> <p> Make sure that you have set the laser ranging mode before enabling the function. For detail, see "3.5.2.8 Setting Laser Ranging".</p> <p> The ranging function is only available when the distance is longer than 10 m.</p>
		<ul style="list-style-type: none">Press the button to capture an image.Press and hold the button to record a video. <p> This function is only available on the camera without LRF.</p>
2 + 3	Menu wheel + Ranging button	Press the wheel and the ranging button at the same time to capture an image. <p> This function is only available on the camera with LRF.</p>

Figure 2-3 Component description

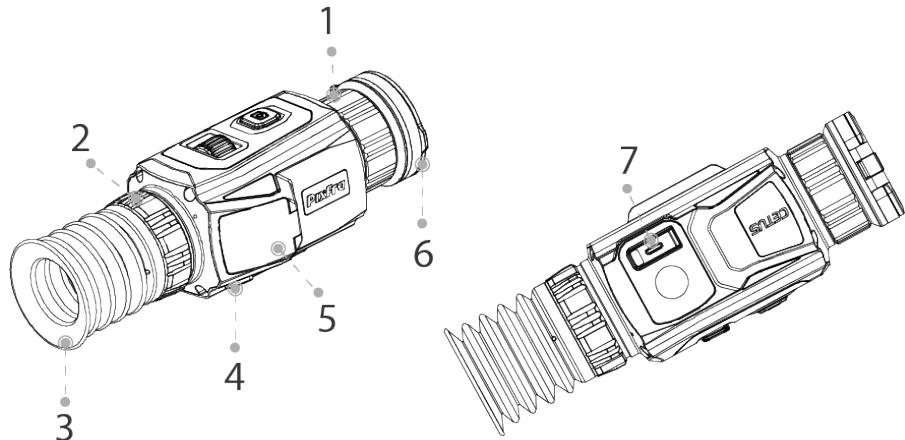


Table 2-2 Component description

No.	Name	Description
1	Focus ring	Manually rotate the ring to adjust the focus for a clear image.
2	Diopter adjustment ring	Adjust the diopter according to your eyesight.
3	Eyeshade	Protects the eyes from glare.
4	Battery compartment switch	Press the switch to open the battery compartment.
5	Battery compartment	The place for holding the battery.
6	Protective cover	Dust prevention. Close the cover when not using the Camera.
7	Type-C port	<ul style="list-style-type: none">• Connects to a data cable for charging.• Connects to the Camera to a computer for exporting files.

3 Basic Operation

3.1 Buttons

When the Camera is on, press and hold the wheel to go to the main menu. Functions of all buttons are as follows.

- Rotate the wheel to move upward or downward the cursor.
- Press the wheel to set the parameters and confirm.
- Press and hold the wheel or press the power button to exit.

3.2 Initializing Camera

Set the language, Wi-Fi password and device time when you start the Camera for the first time or after you have restored your camera to default settings.

Step 1 Press the power button to start the Camera, and the language setting screen is displayed.

Step 2 Set the language.

- 1) Rotate the wheel to select the language.
- 2) Press the wheel.

The password setting screen is displayed.

Step 3 Set the Wi-Fi password.

- 1) Rotate the wheel to select the digital to be set.
- 2) Press the wheel.
- 3) Rotate the wheel to set the value, and then press the wheel to save the configuration.

Repeat 1)–3) to set the numbers of the Wi-Fi password one by one.

Figure 3-1 Set password



Step 4 Rotate the wheel to select **Next**, and then press the wheel. The time setting screen is displayed.

Step 5 Set the device time.

- 1) Rotate the wheel to select the digital to be set.
- 2) Press the wheel and then rotate it to set the value.

Repeat 1)–2) to set the numbers of time one by one.

Figure 3-2 Set device time



Step 6 Rotate the wheel to select **Next**, and then press the wheel.

Step 7 Rotate the wheel to select **Enter the Device**.

The viewing screen is displayed.

3.3 Starting and Shutdown

3.3.1 Manual Starting and Shutdown

Press and hold the power button to start or shut down the Camera; press the power button to suspend or weak up the Camera.



After starting the Camera, remove the protective cover of the lens.

- When the Camera is off, press and hold the power button to start it.
- When the Camera is on, press and hold the power button to shut down it.
- When the Camera is on, press the power button to suspend the Camera.
- When the Camera is in suspend mode, press the power button to weak up it.

3.3.2 Auto Shutdown

Step 1 Press and hold the wheel to go to the main menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to go to the **System Settings** configuration screen.

Step 4 Rotate the wheel to select .

Step 5 Press the wheel to set the auto shutdown time. If there is no operation in the configured time, the Camera will automatically shut down.

Step 6 Press and hold the wheel to save the configuration and exit.

After finishing the auto shutdown settings, the Camera will suspend first, and then shut down.

3.4 Image Adjustment

3.4.1 Adjusting Diopter

To get clear images, rotate the diopter adjustment ring to fit your eyesight.

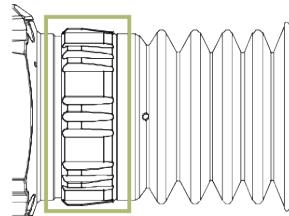


For the first-time use, adjust the diopter before configuring the functions.

Step 1 Aim the lens at the target, and then make your eyes close to the eyeshade.

Step 2 Adjust clockwise or counterclockwise the diopter adjustment ring according to your eyesight.

Figure 3-3 Adjust diopter



3.4.2 Adjusting Focus

Manually rotate the focus ring to adjust the focus for a clear image.

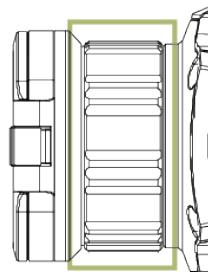
Step 1 Aim the thermal lens to the target.

Step 2 Adjust clockwise or counterclockwise focus ring until the view is clear.



During the adjustment, do not touch the lens to avoid smudging it; otherwise it might affect the image quality.

Figure 3-4 Adjust focusing



3.4.3 Setting Status Bar Display

Step 1 Press and hold the wheel to go to the main menu

Step 2 Rotate the wheel to select > .

Step 3 Press the wheel to enable OSD, and then the status bar is displayed.

Table 3-1 Description of status bar

Icon	Name	Description
	Auto shutdown	<ul style="list-style-type: none"> Auto shutdown is enabled. The Camera will suspend first, and then shut down. The number is the auto shutdown time that you configured. Auto shutdown is disabled.

Icon	Name	Description
	MIC	<ul style="list-style-type: none">  MIC is enabled, and the videos will be recorded with sound.  MIC is disabled, and the videos will be recorded without sound..
	Auto REC	<ul style="list-style-type: none">  Auto recording is enabled, the camera will automatically record the video when the impact sensor of the Camera detects impact.  Auto recording is disabled.
	Forest Mode	<ul style="list-style-type: none">  Forest mode is enabled. Stands out the targets with high temperature, which makes it easier to find out the targets.  Forest mode is disabled.
	Digital zoom	Supports various digital zooms. The number might different depending on models.
	Wi-Fi	<ul style="list-style-type: none">  Wi-Fi is enabled.  Wi-Fi is disabled.
	Battery level	Displays the battery level in real time.

3.4.4 Setting Color Palettes

Select the color palettes, which adds color to the thermal image and uses color to indicate the temperature.

Step 1 Press the wheel to go to the brief menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel.

Step 4 Rotate the wheel to select the color palettes.

- White Hot (WH): The objects with high temperature are white. The higher the temperature, the brighter the color.
- Sepia (SP): The objects with high temperature are amber. The higher the temperature, the brighter the color.
- Green Hot (GH): The objects with high temperature are green. The higher the temperature, the brighter the color.
- Alarm (AM): The objects with high temperature are red. The objects can stand out.
- Iron Red (IR): The objects with high temperature are red. The higher the temperature, the brighter the color.
- Black Hot (BH): The objects with high temperature are black. The higher the temperature, the darker the color.

Figure 3-5 White hot

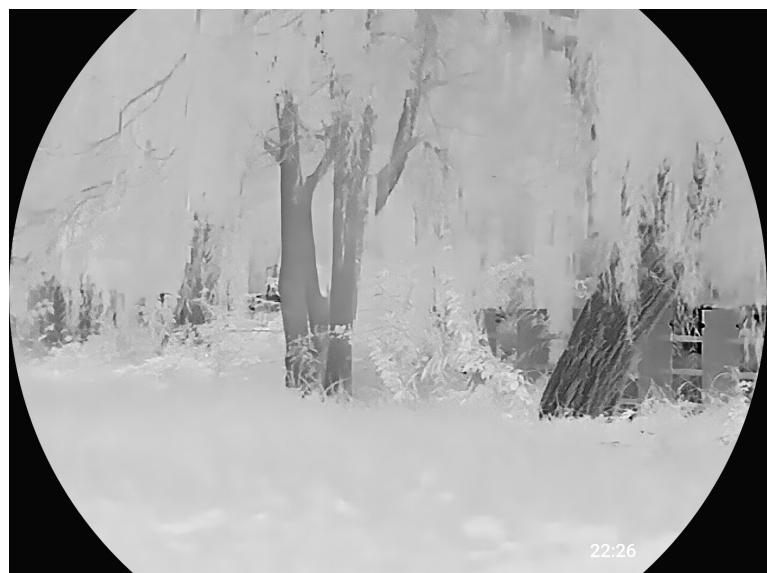


Figure 3-6 Sepia



Figure 3-7 Green hot

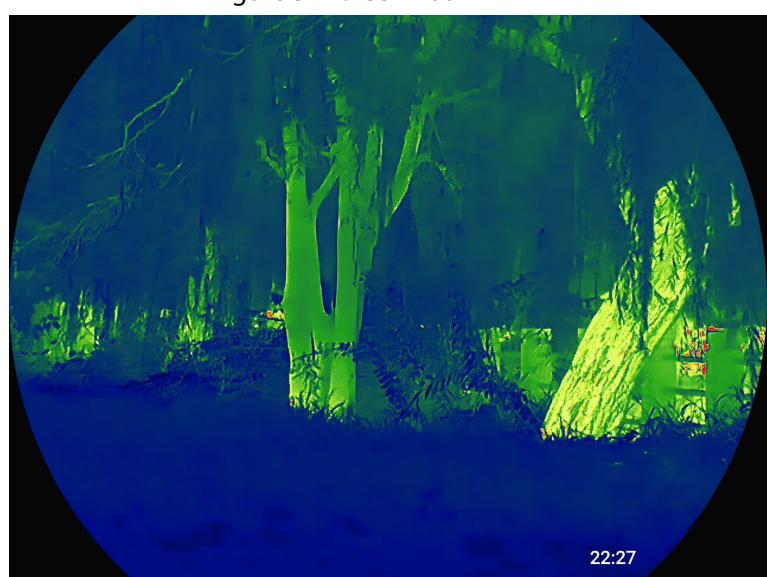


Figure 3-8 Alarm

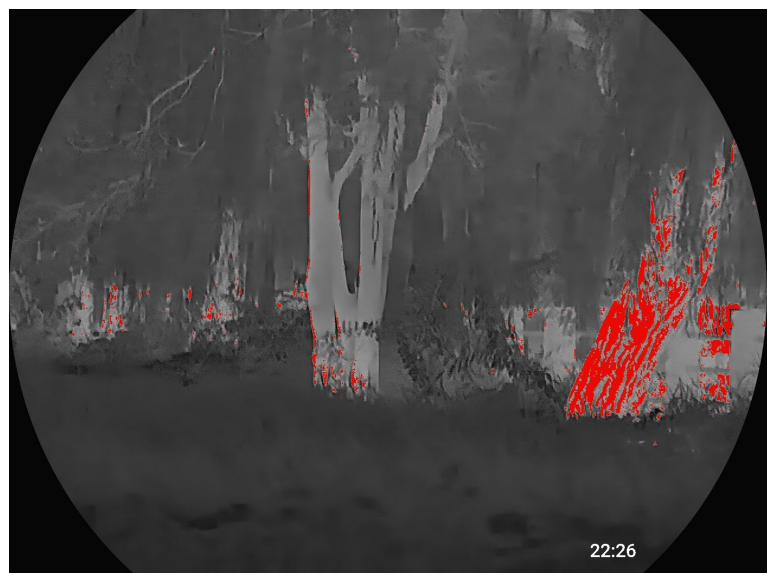


Figure 3-9 Iron red



Figure 3-10 Black hot



3.4.5 Setting Brightness

Adjusts the overall screen brightness. The higher the level is, the brighter the screen will be.

Step 1 Press the wheel to go to the brief menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel.

Step 4 Rotate the wheel to set the brightness level. The higher the level is, the brighter the screen will be.

3.4.6 Setting Contrast

Adjusts the contrast of the picture. The higher the level is, the more the contrast will be between bright and dark areas.

Step 1 Press the wheel to go to the brief menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel.

Step 4 Rotate the wheel to select the contrast level. The higher the level is, the more the contrast will be between bright and dark areas.

3.4.7 Setting Sharpness

Adjusts the sharpness of picture edges. The higher the level is, the clearer the picture edges will be.

Step 1 Press the wheel to go to the brief menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel.

Step 4 Rotate the wheel to set the sharpness level. The higher the level is, the clearer the picture edges will be.

3.4.8 Setting Forest Mode

Forest mode stands out the targets with high temperature, which makes it easier to find out the targets.

Step 1 Press the wheel to go to the brief menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to enable Forest mode.

Forest mode stands out the targets with high temperature.

3.4.9 Setting Distance

Select the distance between the target and the Camera.

Step 1 Press the wheel to go to the brief menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel.

Step 4 Rotate the wheel to select the distance between the target and the Camera according to

actual situation.

3.5 Configuring the Camera

3.5.1 Brief Menu

Press the wheel to go to the brief menu. You can set color palettes, brightness, contrast, and sharpness.

Step 1 Press the wheel to go to the brief menu.

Figure 3-11 Brief menu



Step 2 Rotate the wheel to select the parameters to be configured.

Table 3-2 Brief menu

Parameters	Description
Color palettes (⌚)	Press the wheel and then rotate it to select the color palettes, which adds color to the thermal image and uses color to indicate the temperature. For details, see "3.4.4 Setting Color Palettes".
Brightness (⚙)	Press the wheel and then rotate it to set the brightness level. For details, see "3.4.5 Setting Brightness".
Contrast (ⓘ)	Press the wheel and then rotate it to set the contrast level. For details, see "3.4.6 Setting Contrast".
Sharpness (ⓘ)	Press the wheel and then rotate it to set the sharpness level. For details, see "3.4.7 Setting Sharpness".
Forest Mode (🌲)	Press the wheel to enable forest mode. For details, see "3.4.8 Setting Forest Mode".
Distance (⊕)	Press the wheel and then rotate it to select the distance between the target and the Camera according to the actual situation. For details, see "3.4.9 Setting Distance".

Step 3 Press and hold the wheel to exit and save the configuration.

3.5.2 Standard Menu

3.5.2.1 Setting Zeroing Profile

Procedure

- Step 1 Press and hold the wheel to go to the standard menu.
- Step 2 Rotate the wheel to select 
- Step 3 Press the wheel.
- Step 4 Rotate the wheel to select the zeroing profile as needed.



The Camera supports multiple zeroing profiles.

Figure 3-12 Zeroing profile



Related Operations

- Rotate the wheel to select  to add a zeroing file.
- Rotate the wheel to select  to delete a zeroing file.
- Rotate the wheel to select  to edit zeroing file name.

3.5.2.2 Setting Zeroing

Prerequisites

Before setting zeroing profile, make sure that you have configured zeroing profile in **Zeroing Profile**. For details, see "3.5.2.1 Setting Zeroing Profile".

Procedure

- Step 1 Press and hold the wheel to go to the standard menu.
- Step 2 Rotate the wheel to select 
- Step 3 Press the wheel to go to the **Zeroing** configuration screen.
- Step 4 Rotate the wheel to select the parameters to be configured.

Figure 3-13 Zeroing



- Type ()
 1. Press the wheel.
 2. Rotate the wheel to select a number as the reticle number.
 3. Press the wheel to save the configuration.
- Colour ()
 1. Press the wheel.
 2. Rotate the wheel to select the reticle color.
 3. Press the wheel to save the configuration.
- Reticle Transparency ()
 1. Press the wheel.
 2. Rotate the wheel to select the reticle transparency level.
 3. Press the wheel to save the configuration.
- Distance ()

Figure 3-14 Setting distance



①

1. Press the wheel.
2. Rotate the wheel to select the distance between the target and the Camera according to the actual situation.
3. Press the wheel to save the configuration and go to the reticle configuration screen.

②



- ◊ Rotate the wheel to select  and then press the wheel to add a distance.
- ◊ Rotate the wheel to select  and then press the wheel to delete a distance.

Step 5 Adjust the reticle.

Figure 3-15 Adjusting the reticle



- 1) Select  and then press the wheel to set the distance.
- 2) Select , press the wheel, and then rotate it to set zoom as needed.
- 3) After shooting at the target, select  and then press the wheel to freeze the image.
- 4) Select , and then press the wheel to select X-axis and Y-axis.
- 5) Rotate the wheel to move the reticle to the shooting point.
- 6) Press and hold the wheel to exit.

Step 6 Press and hold the wheel to save the configuration.

Select **Confirm** on the prompt page.

3.5.2.3 Setting Smart Ballistics

Prerequisites

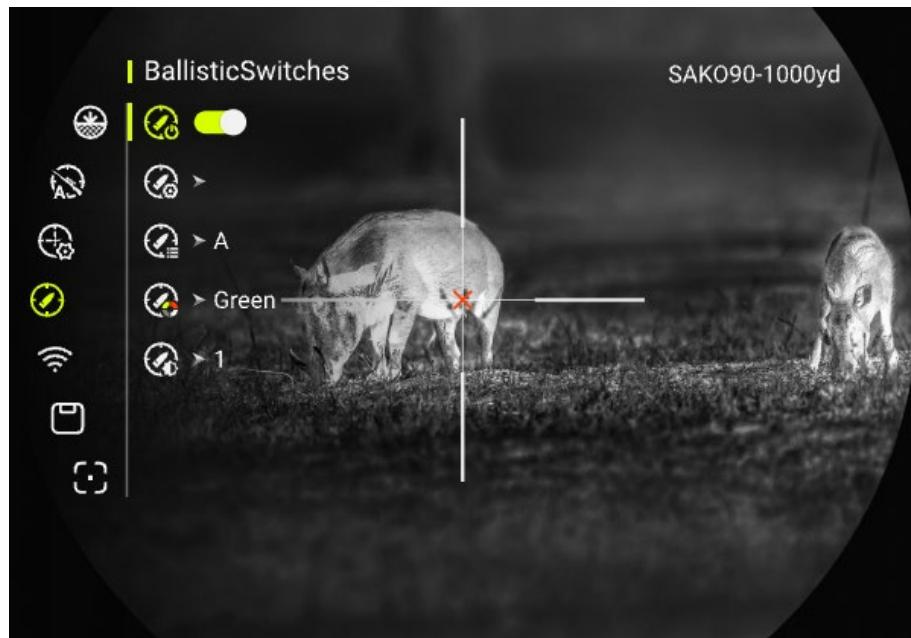
Before setting smart ballistics, make sure that you have configured zeroing in **Zeroing**. For details, see "3.5.2.2 Setting Zeroing". This function is only available on the camera with LRF.

Procedure

Step 1 Press and hold the wheel to go to the standard menu.

Step 2 Rotate the wheel to select .

Figure 3-16 Smart ballistics



Step 3 Press the wheel to set smart ballistics.

- Rotate the wheel to select and then press the wheel to enable or disable smart ballistics.
 - ◊ On: Enable the smart ballistics function. The Camera can calculate the landing point of the bullet automatically according to configured parameters.
 - ◊ Off: Disable the smart ballistics function. The Camera will not calculate the landing point of the bullet.
- Rotate the wheel to select and then press the wheel to set the parameters.
 1. Rotate the wheel to select the parameter to be configured.
 2. Press the wheel to go to the configuration screen.
 3. Rotate the wheel to select the digital to be set, press the wheel, and then rotate it to set the value.

Table 3-3 Parameters of ballistic calculations

Parameters	Description
Zeroing Profile	Displays the zeroing profile that you selected in "3.5.2.1 Setting Zeroing Profile".
Zeroing Range	Displays the distance that you configured in "3.5.2.2 Setting Zeroing".
Ballistic Coefficient	
Ballistic Type	Enter according to the parameters on the bullet package.
Ballistic Weight	
Init Velocity	Enter the value according to the actual situation.
Sight Height	The distance from the muzzle axis to the camera axis.
Altitude	
Temperature	
Air Pressure	Enter the parameter according to the actual situation.
Humidity	

Parameters	Description
Wind Speed	
Wind Direction	

4. Press and hold the wheel to save the configuration and exit.

3.5.2.4 Setting Wi-Fi Connection

After enabling Wi-Fi connection, you can connect your phone to the hotspot of the Camera, and then access the Camera with the app.

The frequency bands and modes and the nominal limits of transmitted power (radiated and/or conducted) applicable to this radio device are the following:

Wi-Fi 2.4 GHz (2.4 GHz to 2.4835 GHz)	20 dBm
Wi-Fi 5 GHz (5.15 GHz to 5.25 GHz)	23 dBm

Procedure



Some cameras will automatically disable the Wi-Fi function when the battery level is lower than 15%.

Step 1 Scan the QR code with your smart phone to install the app.

Figure 3-17 QR code

iOS



Android



Step 2 Press and hold the wheel to go to the main menu.

Step 3 Rotate the wheel to select .

Step 4 Press the wheel to select the Wi-Fi band.

Step 5 Enable the Wi-Fi of your phone, and then connect to the hotspot of the Camera.

- Wi-Fi name: Model number + serial number.
- Wi-Fi password: The password that you have set during the initialization. For details, See "3.2 Initializing Camera".

Step 6 Log in to the app.

Add access devices according to the prompt.

Related Operations

Changing the Wi-Fi password:

1. Press and hold the wheel to go to the main menu.
2. Rotate the wheel to select .
3. Press the wheel to go to the **System Settings** configuration screen.
4. Rotate the wheel to select .

5. Press the wheel to go to the password setting screen.
6. Rotate the wheel to select the digital to be set, and then press the wheel.
7. Rotate the wheel to set the value, and then press the wheel to save the configuration.
8. Repeat 6-7 to set the numbers of the Wi-Fi password one by one.
9. Rotate the wheel to select **Confirm** and then press the wheel to save the password.

3.5.2.5 Setting PIP

Step 1 Press and hold the wheel to go to the main menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to enable or disable the PIP mode.
After enabling the PIP mode. The image center is displayed in the upper middle of the screen.

3.5.2.6 Setting Hot Point

Tracks the point with the highest temperature in real time.

Step 1 Press and hold the wheel to go to the main menu

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to enable or disable the hot point function.
After enabling the hot point function, the hot point icons will automatically locate at the point with the highest temperature in the image.

3.5.2.7 Setting Ranging Mode

After setting the ranging mode, the Camera can measure the range towards targets.

This function is only available on the models without laser range finders. For models with laser range finders, see "3.5.2.8 Setting Laser Ranging".



To guarantee the measurement accuracy, keep your hand steady when measuring the range.

Step 1 Press and hold the wheel to go to the main menu

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to go to the **Ranging** configuration screen.

Step 4 Rotate the wheel to move the green lines to the top and bottom of the target to get the distance between the target and the Camera.
Use the following fig as an example:

- If the target is a wolf, it is 30 m away from Camera.
- If the target is a rabbit, it is 11 m away from Camera.
- If the target is a wild boar, it is 33 m away from Camera.
- If the target is a deer, it is 48 m away from Camera.

Figure 3-18 Ranging



3.5.2.8 Setting Laser Ranging

This function is only available on the models with laser range finders. For models without laser range finders, see "3.5.2.7 Setting Ranging Mode".



DANGER

Laser can cause damages to eyes. Do not look directly at the laser beam or observe the beam with optical devices when the laser is on.

3.5.2.8.1 Measurement Considerations

Measurement targets

The Camera is suitable for measuring the distance between the camera and the targets with high reflectivity (such as road signs on highways), the targets with moderate reflectivity (such as wall) and the targets with low reflectivity (such as tree, golf flag, utility pole, and animal). When the reflectance is reduced to a certain extent, the range will be reduced accordingly.

Factors that influence ranging capability

- Target reflectivity: Generally, the higher the reflectivity of the target, the better the ranging ability. For example, the measuring range of the Camera is 1,500 m for a target with moderate reflectivity, which can be up to 1,800 m for a target with high reflectivity, and 600 m for the targets with low reflectivity. (It might fail to measure the target that hardly generates diffuse reflection, such as water surface.)
- Target shape: When a target is too small or uneven, the ranging ability will decrease.
- Measuring angle: The measurement is more accurate when the reflection surface of target is vertical to the laser emission's direction. If you use the Camera under some extreme conditions, the measurement might be inaccurate.
- Measuring environment: The environment factors include sunshine intensity, the concentration

of water vapor in the air and suspended particles (such as rain, fog, snow, fog and haze).

The range ability of the Camera defined under the following conditions:

- The measurement target is with moderate reflectivity, such as walls.
- The reflection surface of target is vertical to laser emission direction.
- The weather condition is sunny but not under the condition of direct sunlight.

3.5.2.8.2 Setting Laser Ranging Mode

After setting the laser ranging mode, the Camera can measure the range towards targets.



To guarantee the measurement accuracy, keep your hand steady when measuring the range.

Step 1 Press and hold the wheel to go to the standard menu.

Step 2 Rotate the wheel to select

Step 3 Press the wheel to go to the LRF configuration screen.

1) Set LRF dot.

- Constant: The LRF dot will appear all the time.
- Triggered: The LRF dot will appear when you press the laser button.

2) Set LRF duration.

- Single: After pressing the laser button, the Camera measures the distance between the camera and the target once.
- 15 s: After pressing the laser button, the Camera continuously measures the distance between the Camera and the target in 15 s.
- 30 s: After pressing the laser button, the Camera continuously measures the distance between the Camera and the target in 30 s.
- 60 s: After pressing the laser button, the Camera continuously measures the distance between the Camera and the target in 60 s.

Step 4 Press

3.5.2.9 Setting FFC

With FFC (Flat-Field Calibration), the thermal image can be optimized, and you can easily find out temperature changes.

Step 1 Press and hold the wheel to go to the standard menu.

Step 2 Rotate the wheel to select >

Step 3 Press the wheel to select the FFC mode.

- Auto: The camera calibrates image automatically every certain period.
- Semi Auto: On the viewing screen, double-press the wheel to manually calibrate the image.
- Manual: On the viewing screen, close the lens cover, double-press the wheel to manually calibrate the image.

3.5.2.10 Setting DPC

After enabling DPC (Defective Pixels Correction), you can correct the defective pixels in the image.

Step 1 Press and hold the wheel to go to the main menu

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to go to the **Function Settings** configuration screen.

Step 4 Rotate the wheel to select .

Step 5 Press the wheel to go to the **DPC** configuration screen.

- Auto: The Camera automatically corrects the defective pixels in the image.
 1. Select **Auto**.
 2. Follow the screen instructions to close the lens cover.
 3. Rotate the wheel to select **Confirm**, and then press the wheel.
- Manual: You need to correct the defective pixels manually.
 1. Press the wheel to select X-axis and Y-axis.
 2. Rotate the wheel to make the cursor coincide with the defective pixel.
 3. Double-press the wheel to save the configuration.



The center of the cursor is the position of the defective pixel.

- Restore: The DPC configuration is restored to the primary state.

3.5.2.11 Function Settings

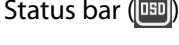
Step 1 Press and hold the wheel to go to the main menu

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to go to the **Function Settings** configuration screen.

Step 4 Rotate the wheel to select the function to be configured.

Table 3-4 Function settings

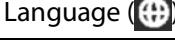
Function	Description
Zoom Step 	Press the wheel and then rotate it to set the zoom step.
ComPass 	Press the wheel to enable the compass, and the current orientation information is displayed at the bottom of the screen.
Compass Correction 	Press the wheel to initialize the location. In 20 s, rotate the scope along the three axes indicated by the icon, with each axis rotating at least 360°. After 20 s, the calibration completes automatically and exit to the main menu.
Burning Warning 	Press the wheel to enable the burning warning function. When the lens is in the risk of burning, a note will be displayed on the screen and the shutter will be off automatically.
Logo 	Press the wheel to enable logo display, and the logo will be display on the left lower corner of the screen.
Status bar 	Press the wheel to enable OSD display, and the status bar is displayed. For details, see "3.4.3 Setting Status Bar Display".
FFC Mode 	Press the wheel to select the FFC (Flat-Field Calibration) mode. For details, see "3.5.2.9 Setting FFC".
DPC 	Press the wheel and then rotate it to select the DPC (Defective Pixels Correction) mode, and then you can correct the defective pixels in the image. For details, see "3.5.2.10 Setting DPC".

Function	Description
Auto REC 	When the impact sensor of the Camera detects impact, it will automatically record the video, recording the wonderful moment of hunting. For details, see "3.6.1.1 Auto Recording".
Power Light 	Press the wheel and then rotate it to set the level.
MIC	Press the wheel to enable or disable the microphone. <ul style="list-style-type: none"> On: The videos are recorded with sound. Off: The videos are recorded without sound.

3.5.2.12 System Settings

Step 1 Press and hold the wheel to go to the main menu
Step 2 Rotate the wheel to select 
Step 3 Press the wheel to go to the **System Settings** configuration screen.
Step 4 Rotate the wheel to select the parameter to be configured.

Table 3-5 System settings

Parameter	Description
Auto Standby 	Press the wheel and then rotate it to set the auto standby time. The Camera will automatically standby in the configured time.
Always-on Display 	Press the wheel to enable or disable the logo display when the device stands by. <ul style="list-style-type: none"> On: The logo is display on the screen when the device stands by. Off: The logo is not display on the screen when the device stands by.
Auto Shutdown 	Press the wheel and then rotate it to set the auto shutdown time. For details, see "3.3.2 Auto Shutdown".
USB Mode 	Press the wheel and then rotate it to select the USB mode. <ul style="list-style-type: none"> ON: The Camera can be used as a storage device. OFF: Charge the Camera.
Set Wi-Fi Password 	Change the Wi-Fi Password of the Camera. For details, see "3.5.2.4 Setting Wi-Fi Connection".
Language 	Press the wheel and then rotate it to select the language as needed.
Unit 	Press the wheel and then rotate it to select the unit.
Time Settings 	Press the wheel go to the Time Settings screen. <ul style="list-style-type: none"> Time Display : Press the wheel to enable or disable the function. After enabling this function, the time will be displayed in the start bar. Time Format : Press the wheel and rotate it to select the time format to be displayed. Time Settings : Press the wheel to go to the Date&Time page. Rotate the wheel to select the digital to be set, press the wheel and then rotate it to set the value.
Version 	Press the wheel to view the device information.

Parameter	Description
Restore 	<p>Press the wheel to go to the restore setting screen, and then rotate the wheel to select the restore mode.</p> <ul style="list-style-type: none"> Format: Clears images and videos. Restore Default: Restores parameter configuration to factory defaults. Factory Defaults: Completely restore device parameters to the factory default, including the Wi-Fi password and zeroing profiles, and more.

3.6 Video and Snapshot

3.6.1 Recording Videos

3.6.1.1 Auto Recording

After enabling the auto record function, the camera will automatically record the video when the impact sensor of the Camera detects impact.

Step 1 Press and hold the wheel to go to the standard menu.

Step 2 Rotate the wheel to select  > .

Step 3 Press the wheel to enable or disable the auto record function.

3.6.1.2 Recording Videos

On the viewing screen, press and hold the button  for 3 seconds to start recording a video. The recording icon flashes on the screen and the recording time is display.

Press and hold the button  again for 3 seconds to stop the recording. When the recording stops, the recording time will display normally.



For the camera with LRF, press and hold the button  for 3 seconds to start or stop recording a video.

3.6.2 Capturing Images

On the viewing screen, press the button  to capture an image.

The screen will display an icon when the capturing succeeds.



For the camera with LRF, press the wheel and the button  at the same time to capture an image.

3.6.3 Viewing Local Album

The captured images and recorded videos are stored in the device, and you can view them in the local album.

Step 1 Press and hold the wheel to go to the main menu.

Step 2 Rotate the wheel to select .

Step 3 Press the wheel to go to the Gallery.

- 1) Rotate the wheel to select the image or video that you want to view.
- 2) Press the wheel to view the image or video.

3.6.4 Exporting File

Exports the recorded and captured files.

Step 1 Connect the Camera to the computer through Type-C data cable.

The driver will automatically be installed for first-time connection.



- Connect the cables before starting the Camera. Do not hot swap the Type-C port of the Camera.
- Select **On** on the **USB Mode** configuration screen after connecting the Camera to the computer.

Step 2 On the computer desktop, double-click **My Computer**, and then open the Camera disk at a mobile storage device.

Step 3 Select the files to export and copy them to the computer.

The specific computer client is required for playing the exported files.

Step 4 Disconnect the Type-C data cable with the computer.

After connecting the Camera to the computer, images can be displayed on the Camera, but the functions of recording and capturing will not be available.

3.7 Power Supply

You can supply power to the Camera through the rechargeable battery coming with the Camera or charging with the Type-C cable.

3.7.1 Installing the Battery

Step 1 Open the cover of the battery compartment.

Step 2 Put one battery into the battery compartment.



Make sure that the battery is installed with the positive electrode downward.

Step 3 Tighten the cover.

3.7.2 Charging

The status bar will display battery information after the Camera starts. When the battery is low, charge the Camera timely to make sure the normal function.

- During charging, keep the battery temperature 0 °C to +60 °C (+32 °F to +140 °F).
- Charge the Camera with the data cable that comes with the delivery.

Step 1 Open the sealing cover of the port when charging.

Step 2 Connect the Type-C cable to the port to charge the Camera.

The charging indicator states:

- Red and green lights flashing alternately: charging error.
- Red light on: charging.
- Green light on: fully charged.
- Off: not connected to data cable to charge.

4 System Update

Update the Camera manually or through the app.

4.1 Upgrading Manually

- Step 1 Download the latest firmware from www.pixfra.com/support/download-center to your computer.
- Step 2 Connect the Camera to the computer through Type-C data cable.
- Step 3 Press and hold the wheel to go to the main menu.
- Step 4 Rotate the wheel to select .
- Step 5 Press the wheel to go to the **System Settings** configuration screen.
- Step 6 Rotate the wheel to select .
- Step 7 Press the wheel to enable USB mode.
- Step 8 Copy the upgrading file (.bin), and then shut down the camera.
- Step 9 Disconnect the camera and the computer.
- Step 10 Start the Camera.
- Step 11 Rotate the wheel to select **Confirm**, and then press the wheel to start upgrading.

4.2 Upgrading through App

When the app detects new program for upgrading, it will prompt a notification. Tap **Upgrade** to upgrade the system.

Appendix 1 Compliance Notice

The thermal series products might be subject to export controls in various countries or regions, including without limitation, the United States, European Union, United Kingdom and/or other member countries of the Wassenaar Arrangement. Please consult your professional legal or compliance expert or local government authorities for any necessary export license requirements if you intend to transfer, export, re-export the thermal series products between different countries.